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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/608,128 | 06/30/2003 | Ashoke Ravi | P-5782-US | 2996 |
| 27130 | 7590 | 11/04/2005 | EXAMINER | |
| EITAN, PEARL, LATZER & COHEN ZEDEK LLP 10 ROCKEFELLER PLAZA, SUITE 1001 NEW YORK, NY 10020 | | | HANNON, CHRISTIAN A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2685 | |

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/608,128

Applicant(s)

RAVI ET AL.

Examiner

Christian A. Hannon

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12 and 15-18 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 13, 14 and 19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/26/05, 10/13/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 7-8 & 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Ravi et al (US 6,639,481), herein Ravi.

Regarding claims 1, 7 & 15, Ravi teaches a phase shift generator to provide a phase shift of 90 degrees to an oscillation signal (Figure 2, Item 27) between a first oscillation tank (figure 2, Item 12), which provides no phase shift and a second oscillation tank (Figure 2, Item 52)(Column 3, Lines 63-67; Column 4, Lines 1-10). Corresponding claims 7 & 15 refer to an oscillator and a method that read analogous to claim 1 and are therefore rejected on the same grounds as claim 1.

In regards to claim 2, 8 & 16, Ravi teaches the apparatus, oscillator and method of claims 1, 7 & 15 respectively. Ravi also teaches an additional phase shift generator to provide a phase shift of 90 degrees to the oscillation signal from the second oscillation tank (Column 4, Lines 6-10). Corresponding claims 8 & 16 refer to an oscillator and a method that read analogous to claim 2 and are therefore rejected on the same grounds as claim 2.

Regarding claim 3 & 17, Ravi teaches the apparatus and method of claims 2 & 16 respectively. Ravi also teaches a phase-inverter to invert the phase of the oscillation signal stemming from the second oscillation tank (Column 4, Lines 6-10). Corresponding claim 17 refers to an analogous method to the apparatus in claim 3 and is similarly rejected on the same grounds.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravi in view of Ali (US 6,239,661).

In regards to claims 4 & 18 Ravi teaches the apparatus and method of claims 3 & 17 respectively. However Ravi fails to teach that the phase inverter comprises an amplifier. Ali teaches a quadrature oscillator comprising a phase inverting amplifier (Column 2, Lines 66-67). It would have been obvious to modify Ravi to include a phase inverting amplifier, such as that taught by Ali, in order to provide for a inverted signal. Claim 18 recites an analogous method to claim 4 and is therefore rejected upon the same grounds.

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ravi in view of Javor et al (US 2004/0266356), herein Javor.

Regarding claims 9, Ravi teaches a phase shift generator to provide a phase shift of 90 degrees to an oscillation signal (Figure 2, Item 27) between a first oscillation tank (figure 2, Item 12), which provides no phase shift and a second oscillation tank (Figure 2, Item 52) (Column 3, Lines 63-67; Column 4, Lines 1-10). However Ravi fails to teach the aforementioned circuitry for use in a transceiver comprising a dipole antenna. Javor teaches a transceiver comprising a dipole antenna (Page 1, [0009]; Page 2, [0019]). It would have been obvious to modify Javor in order to include a transceiver with a dipole antenna in order to use said aforementioned circuitry in a practical application.

In regards to claim 10, Ravi & Javor teach the wireless communication device of claim 9, furthermore Ravi teaches an additional phase shift generator to provide a phase shift of 90 degrees to the oscillation signal from the second oscillation tank (Column 4, Lines 6-10).

Regarding claim 11, Ravi & Javor teach the wireless communication device of claim 10, furthermore Ravi teaches a phase-inverter to invert the phase of the oscillation signal stemming from the second oscillation tank (Column 4, Lines 6-10).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ravi in view of Javor and further in view of Ali.

Ravi & Javor teach the wireless communication device of claim 11. However they both fail to teach wherein the phase inverter comprises an amplifier. Ali teaches a quadrature oscillator comprising a phase inverting amplifier (Column 2, Lines 66-67). It would have been obvious to modify Ravi in view of Javor to include a phase inverting

amplifier, such as that taught by Ali, in order to provide for a inverted signal within the wireless communication device.

Allowable Subject Matter

7. Claims 5, 6, 13, 14 & 19 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5, 13 & 19, Ravi, Javor and Ali all fail to teach the apparatus, wireless communication device and method, respectively, wherein the amplifier is able to provide a gain such that a total gain across a loop, which comprises the amplifier, the first and second oscillating tanks, the phase shift generator and the additional phase shift generator is equal to substantially one.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gilbert (US 5,489,878) discloses a current controlled quadrature oscillator based on differential cells.

Lemaire (US 6,124,763) discloses an oscillator with two outputs in quadrature.

Sutardja (US 6,750,727) discloses a low phase noise MOS LC oscillator.

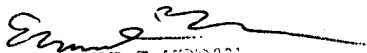
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christian A. Hannon
October 24, 2005



EDWARD F. URBAN
SUPERVISOR, PATENT EXAMINER
TECHNOLOGY CENTER 600